

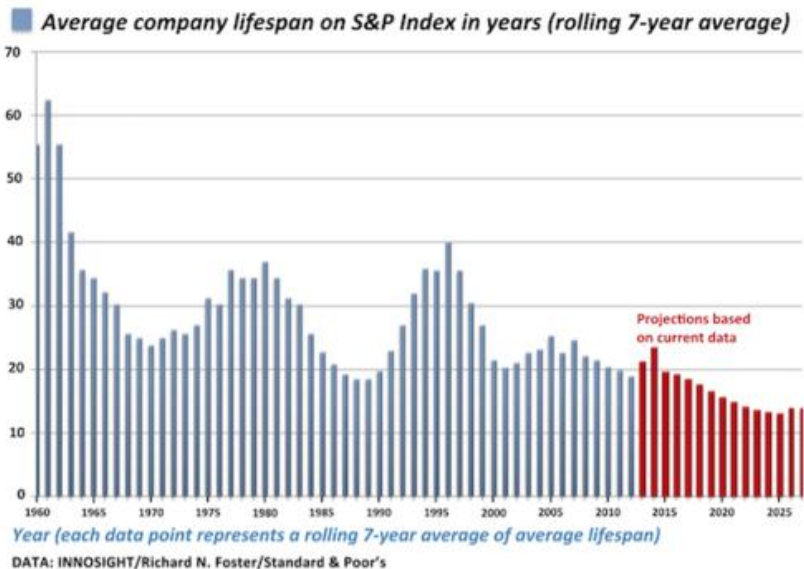


January, 2017

Achieving Business Agility and Sustainability

ARCHITECTING YOUR BUSINESS FOR THE FUTURE

Sustainability is Becoming Harder to Achieve



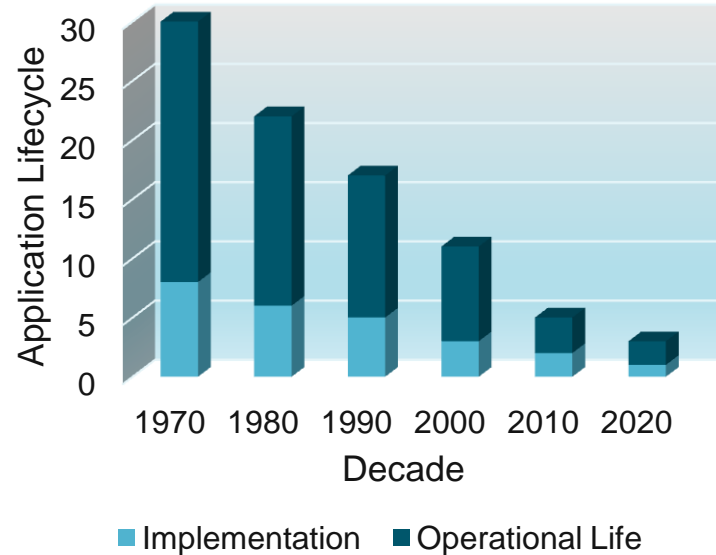
“ . . . The life expectancy of large companies, faced with the challenges of technological disruption, has been reducing for some time. . . . the real story is less about . . . impending death . . . and more about their need to adapt - to move through business and product life cycles more quickly. . . ”

Source: [Neil Perkin](#)

New technologies and the business models they enable bring constant change to the markets in which companies compete. Many of them struggle to navigate the shift toward digital operating and business models and keep up with technological disruption. Survival requires that companies maintain their ability to transform by monitoring their operational architecture and upgrading it before it loses currency.

Agility* is Required to Meet the Challenge

- Change demands new solutions faster to remain competitive. However, these solutions have shorter operational lives.
- As a result, new or updated solutions to new or recurring business problems are needed more and more frequently.
- Throwing existing solutions away and building new ones, even at an accelerated rate, is not the answer—**Adaptive Reuse** is.



“Agility is the ability of an organization to react to change in its environment faster than the rate of these changes”
[Philippe Kruchten](#); also: [Jim Highsmith](#), [Steve Adolph](#)

What is Adaptive Reuse?

- **Adaptive Reuse** is accomplished by taking a proven solution or set of components, adapting them to conform to a new context and using them to accelerate realization of a new solution, for instance:
 - Buying a solution rather than building one or
 - Renovating an existing application already in production to meet a new or evolving need.
- It is enabled by good Architectural practices, involving processes and assets that conform to accepted patterns, such as:
 - Incorporating open-source components in new solutions or
 - Designing new solutions so that selected capabilities, features or functions can be added or enhanced quickly and easily later, even though it may add to the initial implementation cost now.
- However, designing purely for reuse does not constitute a best practice and does not create the value that best practices will.
 - If a solution is designed without consideration for changes in business context that may occur over its expected life, then it is quite possible to waste money designing for scenarios that may never happen.
 - Designing for reuse has developed a bad reputation as a money-waster in the past for exactly this reason.
- So, how can you leverage **Adaptive Reuse** for your business?

Adaptive Reuse is Enabled by ArchDev™

Success in Business is a Balancing Act:

- **Business Agility** contributes to **Sustainability**.
- **Good Architecture** is the key to achieving **Business Agility**.
- Architecting business solutions properly with an eye toward **targeted business results** requires planning for and/or applying **Adaptive Reuse** successfully.
- Many businesses employ **Agile** development to accelerate solution delivery; however, **Agile** projects often do not exploit **Adaptive Reuse** and produce **ad-hoc Architecture**.
- **DevOps** is the latest trend in lifecycle management. It reduces build-test-deploy cycle time but it does nothing to address **ad-hoc Architecture** produced by many **Agile** projects.

What is *ArchDev*[™]?

- ***ArchDev*[™]** is a best practice complement to ***Agile*** and ***DevOps*** that promotes good Architecting, leverages ***Adaptive Reuse*** and allows Architectures to stay ahead of application development.
- It incorporates ***Agile EA Management (EAM)*** to assess As-Is and To-Be states and a gap analysis to identify transformation initiatives to feed into the portfolio management process. The business context driving prioritization is a major factor in selecting appropriate architectures for initiatives.
- Where ***DevOps*** integrates the tasks required to accelerate the development to deployment cycle, ***ArchDev*[™]** integrates the disciplines required to identify a target architecture which informs the solution design, monitor its implementation and ensure its continued validity in the face of a changing environment.
- If changes in requirements or business context necessitate architecture revisions at any point in the development cycle or thereafter, ***ArchDev*[™]** processes facilitate identifying the best replacement and following the most efficient path to migrating to it.
- ***ArchDev*[™]**, therefore, enables you to strike the balance between expedience and Architecting your business, allowing you to preserve ***Business Agility*** and ***Sustainability***.

ArchDev™ and Agile/DevOps



Enterprise Architecture Management

Focus on:

- Strategy, Business Models, Operating Models, Operational Architecture
- As-Is vs. To-Be Architecture and Gap Analysis
- Transformation Planning
- Portfolio Construction and Analysis

Program/Project Management

Focus on:

- Program/Project Definition
- Solution Design
- Scope, Plan, Budget Definition
- Execution
- Monitoring and Management

ArchDev™

ArchDev™ stresses agile EA and business context as precursors to defining programs and projects. **ArchDev™** processes that overlap with Agile/DevOps focus on adherence to architectural standards

Agile/DevOps

Agile/DevOps focuses on efficient project execution and a shortened develop-test-deploy cycle. Without the context provided by **ArchDev™** there is a greater chance to stray from the design and longer-term benefits.

Successes That Illustrate the Value of ArchDev™

The rewards for getting it right can be substantial



Amazon redeployed the infrastructure architecture they needed for their own operations and created a massive profit center.



HP, IBM and even Google are still trying to catch up.



Uber and Airbnb created new technology-enabled business models that directly attack traditional taxicab and hotel businesses. They reused existing Business Architectures but leveraged new operational architectures to outsource fulfillment and reduce the need for physical assets on their balance sheets.



Netflix evolved its original business model, reusing the infrastructure of its customer-facing components, but replaced its physical CD and DVD fulfillment mechanism with a subscription-based, web-enabled one.

What If You Leveraged ArchDev™?

- You could improve your ability to:
 - Revise and transform processes and enabling technologies
 - Scale operations
 - Enable new business models
 - Adapt to new sales and delivery channels
 - Manage costs

- And do it faster and with less risk than your competitors and new industry entrants

So, Why Isn't Everyone Doing It?

- **ArchDev™** requires dedicated effort and investment, ideally **before** emergent situations develop
 - Many companies live from emergency to emergency and refuse to make an investment in the required capabilities between events. When reacting to unanticipated marketplace challenges, they discount the value of discipline.
 - Companies may be missing expertise in one or more areas and resist using outside resources to fill gaps.
 - 'Not-invented-here' syndrome impedes adoption of new practices or integration of 3rd-party components embodying newer technologies.
 - Companies that do not prioritize reusability may not have assets that can be adapted and reused easily. This is especially true for companies standardized on **Agile** development.

- In the absence of **ArchDev™**
 - **Agile** and **DevOps** may simply be a false economy in which solutions are delivered relatively quickly but shortchange the future.
 - Under competitive and time pressures, many initiatives result in **flawed Architecture** that impedes **Business Agility** downstream.

- If this is where you are, **Archemy™** can help . . .

Archemy[™] Enables ***ArchDev***[™]
for your Business

How?

- We provide the ability to qualify, identify, adapt and deploy proven **reusable architectures**, accelerating delivery, ensuring quality, cutting costs and mitigating risks.
- By helping to match your needs with viable **business and technology architectures** and **reusable components** that are known to work, we reduce the overhead required to implement **well-architected solutions** and help you achieve the **Business Agility** required to respond rapidly when the next challenge arises
- When the architecture of a solution that we have had a hand in implementing is superseded by something new, we can alert you to the need to revisit its place in your operational infrastructure. You can avoid falling into a situation in which your competitiveness is compromised by the processes or systems that enable your operations.
- We can provide you access to a wide range of experts to fill gaps in any area in that you may have—from strategy to enterprise architecture to development and delivery.

What Does Archemy™ Provide? (1/2)

- Architecture Expertise, overseen by our **Master Archemist™**, with over 30 years of Enterprise, Business, Technical and Solution Architecture experience
- **ArchDev™** is our proprietary, agile EAM service spanning the lifecycle from strategy elicitation to solution realization. **ArchDev™** Processes and Supporting Services include:
 - **Ideation:**
 - **Strategy Elicitation, Managed Innovation and Design Thinking** to elicit and capture innovative solutions to recurring business problems.
 - **Inception:**
 - **Strategy**—Articulation and Integration of your Business and Technology strategies.
 - **Transformation Planning**—Includes Program Definition and Portfolio Management
 - **Requirements Modeling** – Tool-based refinement of your user stories/cases.
 - **Candidate Architecture evaluation**—**Archemy™** tool-enabled selection and customization of reusable architecture(s) that apply to your business problems, and/or creation of new best-of-breed architecture when required.
 - **Elaboration:**
 - **Solution Design**—Specification incorporating Adaptive Reuse and best-practice architecting.
 - **Implementation**
 - **Solution Customization**—Solution realization leveraging Adaptive Reuse and best-practice architecting.
 - **Deployment**
 - Overall solution suitability. Quality and speed of delivery achieved via Archemy's expertise blending **ArchDev™** and DevOps to smoothly adapt and reuse, and implement & deploy.

What Does *Archemy*[™] Provide? (2/2)

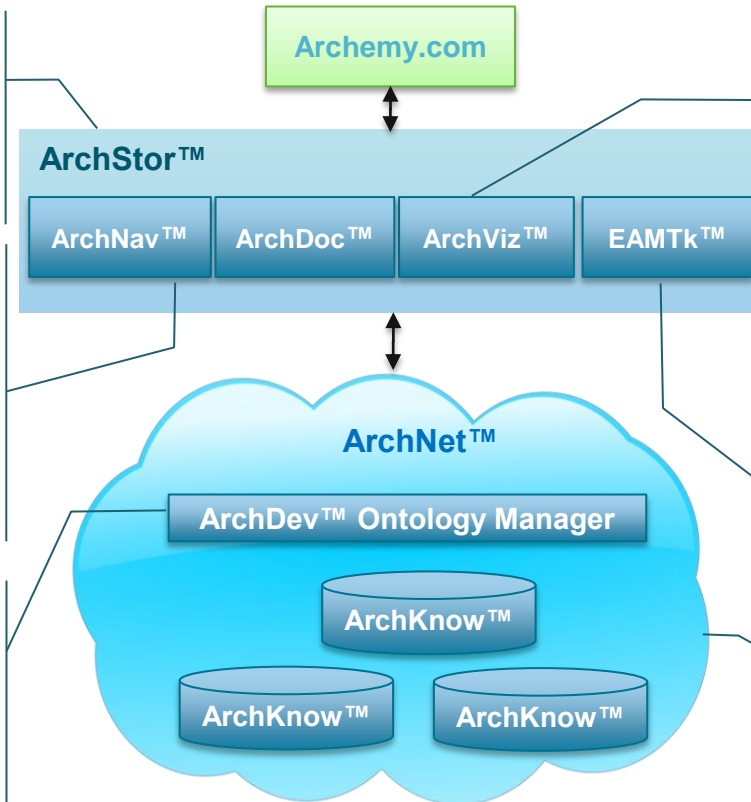
- Staffing—**Archemist**[™] Community of experts
 - Covering the entire initiative lifecycle from Ideation to Deployment
- Innovative, Proprietary Tooling
 - **ArchNav**[™] is our ontology-based search tool for our **ArchKnow**[™] repositories
 - **ArchViz**[™] is our visual exploration tool providing a drill-down capability into the documentation, meta-information and reusable components contained in our Enterprise Catalogue
 - **ArchDoc**[™] is our **Archifact**[™] documentation process capture tool
 - **ArchNet**[™] is an OTT Cloud-based environment that leverages our **ArchDev**[™] Ontology and our **ArchKnow**[™] distributed enterprise knowledge repository
 - **EAMTk**[™] is our Enterprise Architecture as a Service (EAaaS) platform and toolkit
- Intellectual Property
 - **Archemy**[™] Proprietary Ontology, which includes **ArchART**[™], our Architecture Reference Taxonomy, and Ontology-Driven Catalogue Search
 - **ArchKnow**[™] Distributed Enterprise Catalogue:
 - **Archifacts**[™] library of Architecture evolution process artifacts and reusable components
 - **Reference Catalogue** of process artifacts, methodology, templates, documentation and vendor-provided information; segregated by industry

The *Archemy*[™] Ecosystem – Powering *ArchDev*[™]

ArchStor[™] is the gateway to our tools, Enterprise Catalogue and all of the content available. It also houses the storefront that enables customers to acquire various knowledge, products and services.

ArchNav[™] is our Ontology-based search engine. It allows users to search the **ArchKnow**[™] knowledge repository of reference Architectures, Solution Architectures and Reusable Solutions to identify candidates that can be reused to accelerate realization of solutions to recurring business problems.

Our **ArchDev**[™] Ontology and its associated **ArchArt**[™] adaptive reuse taxonomy includes a vast array of descriptive dimensions that cover all relevant aspects of business and technology in various domains and industries



ArchViz[™] is a visual tool that allows users to explore candidate solutions to recurring business problems. It provides access to **Archifacts**[™] that are either reusable knowledge components or information about such; information includes details about reusable component structures as well as the **ArchDoc**[™]-enabled documentation of the process by which the knowledge **Archifacts**[™] were developed and evolved, along with their technical specifications and other artifacts.

EAMTk[™] is our Enterprise Architecture Management toolkit, which provides a facility to model and maintain documentation on business contexts.

ArchNet[™] is an OTT Cloud-based environment that enables the use of Archemy tools via their common Ontology and the underlying distributed **ArchKnow**[™] knowledge repository of **ArchiFacts**[™].

Case Studies

Case Study #1: Catalogue Website

Business Context	Archemy™ Solution	Results
<ul style="list-style-type: none"> A car museum operates a large static website, maintained manually. 	<ul style="list-style-type: none"> A revised catalogue framework was developed to semi-automate updates and maintenance and enable non-technical staff to maintain the site more efficiently. 	<ul style="list-style-type: none"> Static site replaced with dynamic catalogue based on modern web framework technology. Registered users can post their own updates and see them immediately.
Initial State	Technology Employed	End State
<ul style="list-style-type: none"> The laborious maintenance is straining its organization. 	<ul style="list-style-type: none"> Django web framework. Mainstream album technology. Social media feeds, etc. 	<ul style="list-style-type: none"> Decreased cycle time to ingest and publish content. Decreased effort to maintain site.

Reusable Solution Components

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|--|---|
| <ul style="list-style-type: none"> Website implementation applicable to any antique collections and/or museums. Automated management of updates and postings. Scalable picture gallery management tool. | <ul style="list-style-type: none"> Historical information single page mgmt. module. Collectible items update mgmt. module. MVC-based Catalogue powered by Django. Transformation methodology allowing stepwise modernization via coexistence of legacy and new sites. |
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Case Study #2: Heterogeneous Data Integration Platform

Business Context	Archemy™ Solution	Results
<ul style="list-style-type: none"> Extracting, viewing and editing data requires programmer intervention. Integrating SQL and NoSQL data requires consolidating data from one repository into the other. 	<ul style="list-style-type: none"> A 100% O-O platform that links to repositories and enables data joining and manipulation via a federation of persistent classes. GUI interface obviates the need for programmers. 	<ul style="list-style-type: none"> A user-accessible data integration platform with sharable connectors, data filtering and seamless data objects.
Initial State	Technology Employed	End State
<ul style="list-style-type: none"> Excessive reliance on scarce programming resources. Inefficient processes waste time and effort. 	<ul style="list-style-type: none"> Eclipse RAP, Hibernate ORM and OGM, EMF, Teneo, mainstream drivers to SQL and NoSQL data sources. 	<ul style="list-style-type: none"> Users can integrate their own data. The platform can be used via APIs to perform production data integration and monetize (big) data as needed via custom aPaaS applications.

Reusable Solution Components

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|---|--|
| <ul style="list-style-type: none"> Extensible distributed data repository connectivity solution that can integrate with any repository supported by Hibernate. User-friendly GUI that allows user self-service. | <ul style="list-style-type: none"> Multiple application platform deployment options via Eclipse RAP, RCP, and RAP mobile. Choice of infrastructure deployment on private servers or Cloud (via Docker containers). |
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Case Study #3: Customer Location Information Capture

Business Context	Archemy™ Solution	Results
<ul style="list-style-type: none"> Retail financial institution wants to study traffic patterns in its branches to optimize their space utilization, customer satisfaction and sales. 	<ul style="list-style-type: none"> A comprehensive iBeacon solution that tracks customer activities within the branches. Integration of visualization framework and backend analytics to facilitate branch design decisions. 	<ul style="list-style-type: none"> Financial institutions can collect and act upon information related to branch layout effectiveness faster and with greater frequency. Financial performance of branches and overall customer satisfaction is greatly improved.
Initial State	Technology Employed	End State
<ul style="list-style-type: none"> Design decisions are made at great cost based on informal observation, intuition and guesswork. 	<ul style="list-style-type: none"> Online connectivity to iBeacon data store managed by 3rd-party. Analytics and visualization algorithms, and related tools and platform. 	<ul style="list-style-type: none"> Financial Institution has a re-deployable platform and a decision-support toolset that can be installed in every branch, managed centrally, and operated for a discrete time to then drive design changes.

Reusable Solution Components

- | | |
|--|---|
| <ul style="list-style-type: none"> Cloud-based iBeacon management platform. Scalable centralized backend analytics engine. | <ul style="list-style-type: none"> Visualization tools that facilitate decisions focused on branch space and services management (e.g., heat maps showing concentration of customers). |
|--|---|

In Summary

A Better Way

- Many companies don't focus on big-picture architecture when building solutions. As a result, bad architecture is implemented, especially where Agile and DevOps are employed.
- Versatility, plasticity and reusability are shortchanged, creating a need to build replacement solutions rather than transform existing ones when the business context changes.
- Why? Architecting requires knowledge and expertise and can be time-consuming and expensive to practice.
- The **Archemy™ ArchDev™** approach can provide a cost-effective and efficient path to good architecture, one that pays for itself in accelerated solution realization, reduced TCO, lower implementation risks and, ultimately, increased business agility.
- With good architecture in place, ***you don't navigate the shift, you shift the navigation***. That is, you're enabled to set your own path, not just react to changes in the environment.
- Now, it's not fast and cheap at the expense of good; it's all three—architecture, for the price of chaos.



Architect Success

Thank You!